Women and Birth xxx (2018) xxx–xxx

Contents lists available at ScienceDirect

Women and Birth

journal homepage: www.elsevier.com/locate/wombi

The clinical learning environment of a maternity ward: A qualitative study

Masoumeh Rahimi[a], Fariba Haghani[b,*], Shahnaz Kohan[c], Majid Shirani[d]

[a] Medical Education Research Center, Isfahan University of Medical Sciences, Isfahan, Iran
[b] Department of Medical Education, Medical Education Research Center, Isfahan University of Medical Sciences, Isfahan, Iran
[c] Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
[d] Department of Urology, School of Medicine, Shahrekord University of Medical Sciences, Shahrekord, Iran

ARTICLE INFO

Article history:
Received 16 September 2018
Received in revised form 4 January 2019
Accepted 6 January 2019
Available online xxx

Keywords:
Health professions
Learning environment
Content analysis
Maternity ward
Qualitative research

ABSTRACT

Background: Clinical learning environments influence the learning and performance of learners by creating learning opportunities and experiences. The maternity ward offers a major educational opportunity for midwifery students, obstetrics and gynecology residents and medical interns to acquire and improve crucial skills.
Objectives: This study seeks to determine the way in which the clinical learning environment of the maternity ward creates learning opportunities and enables the accumulation of experiences for the noted learners.
Methods: This qualitative study was conducted using inductive content analysis at the Maternity Ward of Shahid Beheshti Hospital, affiliated with University of Medical Sciences. Midwifery students, medical interns and obstetrics and gynecology residents spend a certain period of time in this ward as a mandatory part of their obstetrics and gynecology training. Data were collected through semi-structured individual interviews and observations and were then analyzed in MAXQDA concurrently with data collection.
Results: Three main categories emerged from the analysis of the data collected from the interviews and observations: disorganized learning opportunities, heavy emotional load and learners' abandonment in the care-provider and learner role.
Conclusion: The maternity ward lacked the necessary organization to generate an environment conducive to learning and independent practice for the three groups of learners. The learners' training and acquired skills were thus affected by the clinical learning environment.

Statement of significance

Problem or issue

The maternity ward is one of the most important clinical settings for OBGYN residents, midwifery students and medical interns to obtain clinical competence in pregnancy and childbirth. Due to the simultaneous presence of different health profession learners with overlapping learning outcomes in the learning environment of the maternity ward, it seems difficult to create ample learning opportunities in this ward for all learners to experience different procedures.

What is already known

- Students' participation in learning opportunities is the main constituent of clinical learning environments.
- Participation in learning opportunities develops the learners' competencies.

What this paper adds

- The maternity ward lacked the required organization to create a conducive learning environment for all three groups of health profession learners to acquire and practice their skills.
- Collaborative care and interdisciplinary education are essential for promoting learning in this ward.
- Designing and implementing an integrated and organized training model can facilitate the active participation of learners from all three health professions and enhance the

* Corresponding author.
E-mail address: haghani@edc.mui.ac.ir (F. Haghani).

https://doi.org/10.1016/j.wombi.2019.01.002
1871-5192/

quality of the CLE in the maternity ward and ultimately promote the health of the mother and newborn.

1. Introduction

For health-profession learners, education and practice take place in complex learning environments.[1] Clinical Learning Environments (CLEs) influence the learners' education and practice by providing opportunities and experiences that lay the groundwork for the achievement of clinical competences.[1–3] The fact that different educational situations create different learning processes[2] calls for a thorough examination of the interactions between health-profession learners and CLEs in different fields and the mechanisms by which learning becomes possible in each clinical setting.[4,5]

Barrett et al. emphasized the difficulties of empowering learners through clinical education and the creation of sufficient learning opportunities.[4] Nevertheless, the main role of all clinical settings is to enable learning opportunities for the development of clinical skills in the learners.[6–8]

The maternity ward is a challenging clinical setting[9] where formulating clinical experiences and controlling the CLE is of vital importance. This ward plays a critical role in the development of clinical competence among midwifery students, medical interns and obstetrics and gynecology (OBGYN) residents. Aside from the time constraints and potential risks to the health of mothers and newborns, this clinical setting also entails an element of unpredictability in the process of childbirth.[10]

Most studies on clinical learning have quantitatively analyzed CLEs or examined the experiences of the learners of a single profession in a single clinical setting.[9–11]

Cotter et al. examined medical students' learning experiences in the maternity ward and highlighted the competition among the students to gain clinical experiences.[11] Brunstad et al. examined midwifery students' learning experiences in the maternity ward and stated that access to learning opportunities and experiences was the main concern of these learners.[9,10]

Social learning and situational learning theories are more capable of elucidating how learning occurs in the dynamic and complex environment of clinical settings,[12] since health-profession students begin their professional career by the scenarios they experience in these settings, where teaching is often spontaneous, non-planned and context-dependent.[13] This trend should explain why researchers have not only shifted their attention to the assessment of the environmental and psychological factors affecting CLEs,[4] but have also adopted approaches that aim to transform the clinical environment into a learning environment for the promotion of clinical competence among all learners.[14] Nevertheless, the learning context's contribution to the acquisition of the necessary competencies – especially in maternity wards – has been greatly neglected. This neglect is problematic because the maternity ward is one of the main educational environments in which learners can gain childbirth management experience and ensure the health of mothers and newborns in the future. The CLE should therefore be thoroughly studied and its effect on the attainment of the expected skills should also be examined among different health-profession learners.

The present study was therefore conducted to evaluate the CLE of the maternity ward vis-à-vis the creation of learning opportunities and experiences for different health-profession learners.

2. Methods

Inductive content analysis was used to qualitatively assess the maternity ward as a Clinical Learning Environment (CLE). CLE is a multidimensional and complex concept[15] and its qualitative study helps create a broad, deep and comprehensive understanding of its multiple facets.[16]

2.1. Study setting

This study was conducted in the maternity ward of Shahid Beheshti Hospital, affiliated with Isfahan University of Medical Sciences, which is one of the major OBGYN training environments for midwifery students, medical interns and OBGYN residents in Isfahan.

Isfahan University of Medical Sciences annually enrolls 28 midwifery students divided into groups of seven to regularly attend the maternity ward in two-week periods, plus 12 OBGYN residents, who spend a six-month period in the maternity ward, and finally, medical interns, who take an eight-week internship in groups of four to six. The midwifery department of the university is responsible for educational planning and training for the midwifery students and midwifery instructors are constantly present in the ward during these courses. OBGYN faculty members are responsible for educational planning and training for the OBGYN residents and interns, but they do not need to be constantly present in the ward during this time; rather, the senior residents are in charge of providing education to the residents and the maternity ward residents are in charge of training the interns. Based on the curriculum developed by these training groups, all three groups of learners are required to provide care to parturient women and mothers over the course of their education and acquire the ability to independently manage childbirth and high-risk pregnancies by the end of their training. The minimum requirement for the groups is 60 childbirths for the midwifery students, 100 for the OBGYN residents and ten for the medical interns.

2.2. Study participants

The study participants consisted of midwifery students, junior and senior OBGYN residents, senior medical students, OBGYN professors and midwifery instructors present in the maternity ward of the select hospital. The midwifery students and OBGYN residents had passed at least one semester in the maternity ward, the medical interns had passed half of their internship and the midwifery professors and instructors had at least one year of teaching experience in the maternity ward. In keeping with the cultural context of Iran, all the participants were female. Table 1 presents the demographic details of the interviewed participants in separate groups.

2.3. Data collection

Data were collected through semi-structured interviews and observations. The semi-structured interviews explored the views and experiences of the learners from the three different groups in the actual CLE of the maternity ward, and the observational approach allowed the researcher to examine the study population's contextual behaviors and interactions in a real-life CLE.[17] In addition, the observation-and-interview approach improved the collection and interpretation of the data.[18]

The researcher visited the maternity ward with an introduction letter from the deans of the midwifery department and the OBGYN residency program. She introduced herself as a medical education student seeking to evaluate the structure and characteristics of the maternity ward as a CLE with the goal of enhancing the quality of clinical education. The researcher carried out observations in this ward through field notes for about two months in multiple work shifts. During this period, the researcher had a routine and impartial relationship with the learners, staff and midwifery

Please cite this article in press as: M. Rahimi, et al., The clinical learning environment of a maternity ward: A qualitative study, Women Birth (2019), https://doi.org/10.1016/j.wombi.2019.01.002

Table 1
Demographic details of the interviewed participants.

	Age (y)	Academic grade	Training type		Age (y)	Academic grade	Training type
1	22	Semester Eight (field internship)	Midwifery student	12	30	Junior resident	OBGYN resident
2	23	Semester Eight (field internship)	Midwifery student	13	24	Semester Thirteen (intern)	Medical student
3	34	Senior resident	OBGYN resident	14	35	Master of midwifery	Midwifery instructor
4	22	Semester Eight (field internship)	Midwifery student	15	26	Semester Thirteen (intern)	Medical student
5	23	Semester Eight (field internship)	Midwifery student	16	35	Senior resident	OBGYN resident
6	36	Master of midwifery	Midwifery instructor	17	23	Semester Eight (field internship)	Midwifery student
7	33	Senior resident	OBGYN resident	18	48	Midwifery PhD	Midwifery instructor
8	24	Semester Thirteen (intern)	Medical student	19	32	Master of midwifery	Midwifery instructor
9	32	Senior resident	OBGYN resident	20	25	Semester Thirteen (intern)	Medical student
10	45	Obstetrician	OBGYN attending	21	23	Semester Eight (field internship)	Midwifery student
11	30	Junior resident	OBGYN resident	22	47	Obstetrician	OBGYN attending

instructors. This relationship helped establish brief interactions and enabled the closer assessment of the behaviors and interactions in the ward. The observations were focused on learning opportunities and educational interactions as well as the learners' interactions with the learning environment and the general climate governing the maternity ward. The researcher made efforts to not allow her presence in the ward to have an impact on the events going on in the ward.

Samples were selected for the interviews through purposive convenience sampling. That is, the researcher's attendance in the ward and observations ran concurrently with the interviews held with the eligible candidates introduced as informants as well as the available volunteers.

The interviews were conducted one on one using directional questions at a time and place set by the respondents. Prior to the interviews, written informed consent was obtained from the participants after they were ensured of their right to withdraw from the study at any point. If the health-profession learners engaged in group discussions about their experiences, the researcher also joined them and participated in the discussions upon receiving their consent and asked to record their conversations. The interviews and observations continued until data saturation was reached, which was defined as the point after which no new information could be obtained from the interviews and observations.

2.4. Data analysis

Data analysis occurred concurrently with the data collection using inductive content analysis. For the purpose of the analysis, the interviews were transcribed, coded and analyzed one by one. Each interview was read several times before the assignment of an initial code. The accuracy and acceptability of the data were increased by asking other researchers to read and code the transcribed interviews to ensure matching coding processes. The data from the field notes were also coded and continuously analyzed alongside coding the data from the interviews. The interview and observation data were then entered into MAXQDA software and an initial coding was performed. After the initial coding, the similar codes were categorized and labeled so that the labeling process would include and fit all the initial codes. The similar categories were placed together to form subcategories, and the subcategories were re-categorized to form the main categories.[19]

3. Results

Twenty-two semi-structured individual interviews were conducted with 22 participants. The observations were performed over a two-month period and 20 field notes were recorded.

The data analyses yielded three main categories and seven subcategories. Table 2 presents the results.

The comments from the interviews are marked with IT (*interview transcript*) next to the participant's number (Table 1), and the comments from the researcher's observations are marked with RO (*researcher's observation*) next to the field note.

3.1. Disorganized learning opportunities

The main challenge for the three groups of learners included few individual learning opportunities and an inadequate access to opportunities for independent practice.

3.1.1. Overlap between the three groups' learning opportunities

The overlap between the three groups' learning opportunities was frequently observed by the researcher and reported by the interviewees. The absence of an independent practice field made it difficult for the learners to acquire the knowledge and abilities required to independently manage mothers.

"Unfortunately, because the midwifery students, OBGYN residents and medical interns all have to learn the process of childbirth management, we have lots of problems in creating learning opportunities for our students" (IT 10).

This difficulty was more evident in educating midwifery students, since they had less power in the system than the attending professors and residents.

"If independent practice is facilitated for the midwifery students, they will be able to learn, but there is too much interference as it is.

Table 2
The main categories and subcategories describing the learning environment in the maternity ward.

Main Category	Subcategory
Disorganized learning opportunities	Overlap between the three groups' learning opportunities
	Ownership attitudes toward the learning opportunities
	Inadequate learning opportunities for all the learners
Heavy emotional load	The lack of emotion management in the learners and professors
	Tension and competition among the learners for achieving their educational goals
Learners' abandonment in the care-provider and learner role	The staff delegating their care-provision role to the learners
	Injury to the mothers in the guise of learning opportunities

Please cite this article in press as: M. Rahimi, et al., The clinical learning environment of a maternity ward: A qualitative study, Women Birth (2019), https://doi.org/10.1016/j.wombi.2019.01.002

Midwifery students have no ground for independent learning right now; they just deliver care as told by the residents or by us. I mean, they only obey the orders. Actually, this interference doesn't let the midwifery students develop their abilities for diagnosis, analysis and judgment" (IT 14).

3.1.2. Ownership attitudes toward the learning opportunities

The residents and attending professors determined the right of the other learners to participate in the learning opportunities, especially childbirth management opportunities. They mostly considered the chance to perform clinical skills/interventions their own entitlement and drove the other learners, not least the midwifery students, to the peripheries.

"We all have to deliver babies in the first year of the residency, so that we can fully learn childbirth management. It doesn't matter how many" (IT 7, 9 and 11).

Despite the residents' tendencies, the midwifery students and interns also attended the ward with similar learning objectives, and the midwifery instructors did their best to allocate some of the childbirths to the midwifery students, even if they were not always successful.

"Our instructors try to give us the opportunity to practice, but the residents are present at all the childbirths and take care of all the work and we no longer have the opportunity to do anything. In the night shifts, we don't even have the right to fully perform a normal childbirth" (IT 1.21).

3.1.3. Inadequate learning opportunities for all the learners

Another issue that hindered the learners' access to learning opportunities was the inadequacy of learning opportunities and the imbalance between the number of childbirths and the number of learners present in the maternity ward. A certain number of labor management cases was fixed for each group of learners in their assessment. Nevertheless, the number of childbirths during the training period did not match the number of learners present in the ward. This issue was somewhat resolved for the residents by planning long-term shifts for them in the maternity ward; however, the midwifery students and interns could only manage four to five childbirths, at best.

"Every day, there are seven to eight midwifery students here who must manage a certain number of childbirths until the end of their course. There are three to four of us –interns- plus a junior resident. Today, we had only three childbirths. How could you possibly divide three childbirths between so many students?" (IT 8).

3.2. Heavy emotional load

A heavy emotional load indicates a climate of unnecessary excitement, extreme stress and hurry, which affects not only the learners' psychological state and readiness for performing clinical skills but also the process of providing care for them. This situation arose from the inability of the learners and professors to manage the emotions, tensions and competitions resulting from the simultaneous presence of all the groups of learners.

3.2.1. The lack of emotion management in the learners and professors

The maternity ward was awash with shouting and hurried actions that had no scientific or therapeutic basis. This situation appeared to be an integral part of the learning environment in this clinical setting. The inability of the learners, clinical professors and, to a far lesser extent, the staff to manage the emotions stirred by the sensitivity of labor was one of the causes of this deficiency. The learners were simply incapable of coping with such stressful situations and, as a result, failed to perform their clinical duties toward the mothers and one another with appropriate calmness.

"During childbirth, we experience a lot of excitement and stress, which I don't think is necessary at all. Whenever there's a childbirth going on, everybody runs toward the delivery room and the senior residents and our professors keep saying 'Hurry up . . . Hurry up!'" (IT 1).

Some of the clinical professors further exacerbated this emotional climate on purpose.

"The attendant in the maternity ward shows an anxious and stressful behavior toward the mothers and residents . . . She speaks loudly. All this talk has nothing to do with educational interactions and communication with the residents and only leads to anxiety and confusion among the learners" (RO 5).

3.2.2. Tension and competition among the learners for achieving their educational goals

The simultaneous presence of learners from all three groups and the tension and competition among them to have the biggest share of the opportunity to manage childbirths was another cause for uneasiness in the ward. There was intensive rivalry among the learners, especially the residents and midwifery students, for whom the sheer number of independent childbirth management cases is a significant component of the evaluation process. This competition was also observed in the other learning opportunities, but was more prominent in the childbirth process.

"As soon as we reach the moment of childbirth . . . whichever midwifery student's turn it is to handle the case and the resident push each other aside until one of them finally manages the childbirth! There's often a fight over childbirth management!" (IT 5).

The simultaneous presence of the learners also caused overcrowding, which negatively affected the learners' and also the mothers' mental state and compromised the learners' performance.

"I'm not happy with the climate in the ward at all . . . It's always too crowded . . . This many people and the noise is too stressful for the mother . . . and besides, . . . there is chaos and the chances of you making a mistake go up" (IT 7).

3.3. Learners' abandonment in the care-provider and learner role

The border between education and care provision was not clear in the learning environment of the maternity ward. There great interrelatedness between the therapeutic duties of the staff and the educational tasks of the learners and clinical professors made the latter group take on greater medical responsibilities, and their teaching/learning activities were thus affected.

3.3.1. The staff delegating their care-provision role to the learners

The staff of the maternity ward tended to delegate some of their care-provision role to the learners.

"The problem we have here is that the staff think the students, who are there to learn, have to obey them. This keeps the learners away from the instructors and makes them do things that are of no educational value. I mean, the learners obey the staff even if it has nothing to do with their actual training" (IT 18).

The maternity ward staff delegated a great part of their medical duties and responsibilities to the learners and relied on the professors to take care of the matter. The learners were given more maternal care duties than was necessary for their training and the midwifery professors' continuous presence in the ward and educational responsibilities made them unofficially assume the responsibility of supervising the maternal care provision in the ward —even the care provided by the residents.

"Two mothers are in labor at the same time. The staff don't even come into the room to take responsibility for this situation. The midwifery instructor has a very difficult job. She has to stay with the midwifery students for childbirth management and arrange the

Please cite this article in press as: M. Rahimi, et al., The clinical learning environment of a maternity ward: A qualitative study, Women Birth (2019), https://doi.org/10.1016/j.wombi.2019.01.002

process of childbirth such that it is educational too. At the same time, she has to take the responsibility of supervising the mothers and the other students" (RO 8).

The staff placed great emphasis on the learners to register their care measures in the files and complete the patients' medical records.

3.3.2. Injury to the mothers in the guise of learning opportunities

The care recipients did not receive adequately safe and woman-centered care, because the care-providers (i.e. both the staff and the learners) were involved in training processes and viewed their care as learning opportunities. The imbalance between learning opportunities and the number of learners resulted in the mothers being regarded as a mere opportunity for learning rather than recipients of care. The harm to the mothers was further exacerbated by the learners' competitive and rushed attitude in the effort to access more opportunities for acquiring skills as well as the staff delegating their care-provision role to the learners. It was the OBGYN residents who took on more of the care duties in the ward, and the existing climate of competition often led to non-scientific and hasty therapeutic interventions.

"One of the senior residents, quite hurriedly and without observing sterile conditions, ruptured the amniotic sac of one of the mothers when the fetal head was not fixed yet! Then her amniotic fluid gushed out, and three to four minutes later, the fetal heartbeat suddenly dropped and the mother had to be rushed into the operating room for a cesarean section" (RO 3).

4. Discussion

This study examined the CLE of the maternity ward in terms of providing learners of different professions with ample learning opportunities, clinical experiences and competency acquisition.

Educational systems often assume that health-profession learners gain the required competencies by simply attending a clinical setting. The present findings, however, indicated that the learners' access to clinical experiences and acquisition of competencies in the maternity ward are largely influenced by the dynamics of the CLE.

Given the importance of learning through experience in health care education,[20] the key feature of a good CLE is to provide the learners with the necessary experiences and encourage their active participation in the offered opportunities.[15,20–23] Nevertheless, in every clinical setting, learners accept different roles under the influence of various factors, and these roles encourage different levels of participation for them.[23]

OBGYN residents, midwifery students and medical interns are simultaneously present in maternity wards. Despite the differences in the care philosophy of these professions, they share a lot of the skills they need to learn in the field of pregnancy and childbirth.[24,25]

In addition to the similarity of learning objectives, the responsibilities of the OBGYN professors, the lack of defined professional boundaries, the organizational policies and the specific hierarchical systems in place among the professions[26] have led to the unfair distribution of learning opportunities and affected the learners' participation in and access to learning opportunities in the three separate professions.

The placement of professors at the top of the hierarchical system makes this group have more organizational power than the other professions and gives them a greater share of the responsibility of providing care, and in turn increases their concerns about legal issues[26] as well as their tension in creating learning opportunities for the residents.

The greater learning opportunities available for the residents and the professors' sense of ownership toward these opportunities reduce the other students' share of them and interns fail to participate in adequate clinical activities and largely play the role of passive observers.

Since learning opportunities are about providing care to mothers, the CLE of the maternity ward should organize these learning opportunities around the provision of safe care to mothers. The overlap between the three groups' learning opportunities disables individual learning opportunities and discourages learning and functional independence in the learners, thereby affecting both the competency acquisition of the learners and the provision of safe care to mothers.

The failure of the CLE to provide learners with equitable access to learning opportunities and the lack of collaboration among the different professions present in the ward mean that learners should make greater efforts to access the available learning opportunities.[27] The result is a climate of competition and conflict among the learners that, together with the philosophical differences between the different care-profession learners and the general inability to manage emotions, creates tension and uneasiness in both the educators and learners and affects intimacy, respect and trust among these groups.[26]

Part of the perceived stress and emotions may be normal, given the particular nature of the maternity ward,[9,10,28] but most of them are unnecessary and can be managed. Since emotions have a great impact on learners' learning and responses to their learning experiences, and since providing safe and woman-centered care requires a mastery over emotions,[29] learners need to acquire emotion management skills, which should be as important to them as clinical knowledge and skills.[29,30]

The excessive focus on and endless efforts for gaining more learning opportunities and the lack of interdisciplinary collaboration[31] decrease the learners' concentration on the provision of woman-centered care[32] and the objectification of pregnant women as mere learning opportunities. The staff's delegation of their maternal care-providing role and their negligence of the learners' role as students work with the non-consistent presence of education supervisors for the residents and interns to create a loss of opportunities, damage the teaching-learning processes and abandon the learners in their learner role and make their care-providing role bolder than necessary. Improving teaching/learning processes and increasing the staff's incentives to support knowledge acquisition by learners can empower CLEs.[33]

Establishing a conducive CLE in the maternity ward that equally supports education for the learners and care provision to the mothers requires an organizational culture that supports interdisciplinary collaboration,[29] since learning is a social and collaborative process in CLEs.[34] The maternity ward is by nature an interdisciplinary setting that necessarily requires collaborative practice.[25] The professions collaborating in the maternity ward differ in terms of education, values, beliefs, experiences, competencies and access to organizational power.[30] Improving organizational guidelines and policies and seeking to offer complementary roles for the three main professions working in the maternity ward helps also promote interdisciplinary training for the learners.[35] Interdisciplinary training then also strengthens the collaboration between these three professions[36] and facilitates a successful collaborative practice.[31] Informing learners about each other's roles,[37] improving their attitudes toward professional communications with the other groups and creating common educational opportunities helps increase the learners' access to learning opportunities and make them better understand the importance of each other's professional role.[11,24,38,39] Aside from the issue of promoted interdisciplinary training, participation in, motivation for and enjoyment of learning opportunities in the maternity ward can be improved by enabling the presence of supervisors, better explaining the learning objectives to the learners prior to their attendance and creating self-directed learning abilities in them.[2,4,22,27]

Please cite this article in press as: M. Rahimi, et al., The clinical learning environment of a maternity ward: A qualitative study, Women Birth (2019), https://doi.org/10.1016/j.wombi.2019.01.002

5. Limitations and strengths

Although the present study evaluated the maternity ward of a single teaching hospital, the diversity in the study participants and the use of interviews and observations increased the validity of the collected data and ensured the in-depth review of the CLE of this ward. The strengths of the study include its assessment of the CLE of the maternity ward from a unique perspective and showing how this environment affects the learners' skill acquisition. Further studies are recommended to be conducted on the CLE of maternity wards so as to improve interdisciplinary and collaborative learning in this field. Examining the interdisciplinary relationships between the learners, the psychological effects of the CLE on them and their peer-learning experiences can also help design better care and education models and improve the CLE of maternity wards.

6. Conclusion

The maternity ward is one of the most important clinical settings for OBGYN residents, midwifery students and medical students for acquiring clinical competence in pregnancy and childbirth. The acquisition of clinical competence is a context-dependent process and any educational setting needs a standard CLE. The overlaps in the CLE in the studied maternity ward was not conducive to the skill acquisition of either of the three groups of health-profession learners active in them. Designing and implementing a collaborative care model and offering interdisciplinary training to the learners help overcome the learners' problems in accessing learning opportunities and create a work culture rich in respect and trust. Such a model reduces competition and conflicts among the learners and gives them equal access to the learning opportunities through teamwork and effective interdisciplinary communication. It also creates a calm emotional climate by balancing the learners' learning and care-provision roles and increasing their focus on providing safe woman-centered care.

Ethical statement

- The name of the ethics committee: Ethics Committee of Isfahan University of Medical Sciences, Isfahan, Iran.
- The approval number: Code: 1396030179.
- The date of approval: 2017-6-7

Acknowledgments

This study was extracted from a PhD thesis (Reference number: 396179) and funded by the Research Department of Isfahan University of Medical Sciences University of Medical Sciences. The authors would like to express their gratitude to Isfahan University of Medical Sciences for supporting this research project and to all the study participants, who helped carry out this study.

References

1. Durning SJ, Artino Jr. ARJr., Pangaro LN, van der Vleuten C, Schuwirth L. Perspective: redefining context in the clinical encounter: implications for research and training in medical education. *Acad Med* 2010;**85**(5):894–901. doi:http://dx.doi.org/10.1097/ACM.0b013e3181d7427c.
2. Bates J, Ellaway RH. Mapping the dark matter of context: a conceptual scoping review. *Med Educ* 2016;**50**(8):807–16. doi:http://dx.doi.org/10.1111/medu.13034.
3. Epstein RM. Assessment in medical education. *N Engl J Med* 2007;**2007**(356):387–96. doi:http://dx.doi.org/10.1056/NEJMra054784.
4. Barrett J, Trumble SC, McColl G. Novice students navigating the clinical environment in an early medical clerkship. *Med Educ* 2017;**51**(10):1014–24. doi:http://dx.doi.org/10.1111/medu.13357.
5. Könings KD, Brand-Gruwel S, Merriënboer JJ. Towards more powerful learning environments through combining the perspectives of designers, teachers, and students. *Br J Educ Psychol* 2005;**75**(4):645–60. doi:http://dx.doi.org/10.1348/000709905X43616.
6. Meyer R, Van Schalkwyk SC, Prakaschandra R. The operating room as a clinical learning environment: an exploratory study. *Nurse Educ Pract* 2016;**18**:60–72. doi:http://dx.doi.org/10.1016/j.nepr.2016.03.005.
7. Brown T, Williams B, McKenna L, Palermo C, McCall L, Roller L, et al. Practice education learning environments: the mismatch between perceived and preferred expectations of undergraduate health science students. *Nurse Educ Today* 2011;**31**(8):e22–8. doi:http://dx.doi.org/10.1016/j.nedt.2010.11.013.
8. Swanwick T. *Understanding medical education: evidence, theory and practice*. John Wiley & Sons; 2013.
9. Brunstad A, Hjälmhult E. Midwifery students learning experiences in labor wards: a grounded theory. *Nurse Educ Today* 2014;**34**(12):1474–9. doi:http://dx.doi.org/10.1016/j.nedt.2014.04.017.
10. Brunstad A, Giske T, Hjälmhult E. How midwifery students experience learning conditions in labor wards. *J Nurs Educ Pract* 2016;**6**(4):136. doi:http://dx.doi.org/10.5430/jnep.v6n4p136.
11. Cotter D, Turner MJ, McAuliffe FM, Higgins MF. Medical students learning experiences of the labour ward: a qualitative research study. *Eur J Obstet Gynecol Reprod Biol* 2016;**206**:204–7. doi:http://dx.doi.org/10.1016/j.ejogrb.2016.09.022.
12. Bleakley A. Broadening conceptions of learning in medical education: the message from teamworking. *Med Educ* 2006;**40**(2):150–7. doi:http://dx.doi.org/10.1111/j.1365-2929.2005.02371.x.
13. Steinert Y, Basi M, Nugus P. How physicians teach in the clinical setting: the embedded roles of teaching and clinical care. *Med Teach* 2017;**39**(12):1238–44. doi:http://dx.doi.org/10.1080/0142159X.2017.1360473.
14. Sholl S, Ajjawi R, Allbutt H, Butler J, Jindal-Snape D, Morrison J, et al. Balancing health care education and patient care in the UK workplace: a realist synthesis. *Med Educ* 2017;**51**(8):787–801. doi:http://dx.doi.org/10.1111/medu.13290.
15. Flott EA, Linden L. The clinical learning environment in nursing education: a concept analysis. *J Adv Nurs* 2016;**72**(3):501–13. doi:http://dx.doi.org/10.1111/jan.12861.
16. Holloway I, Galvin K. *Qualitative research in nursing and healthcare*. John Wiley ; 2016.
17. Mulhall A. In the field: notes on observation in qualitative research. *J Adv Nurs* 2003;**41**(3):306–13. doi:http://dx.doi.org/10.1046/j.1365-2648.2003.02514.x.
18. Musante K, DeWalt BR. *Participant observation: a guide for fieldworkers*. Rowman Altamira; 2010. doi:http://dx.doi.org/10.1016/j.ijnurstu.2017.01.001.
19. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today* 2004;**24**(2):105–12. doi:http://dx.doi.org/10.1016/j.nedt.2003.10.001.
20. Sheehan D, Jowsey T, Parwaiz M, Birch M, Seaton P, Shaw S, et al. Clinical learning environments: place, artefacts and rhythm. *Med Educ* 2017;**51**(10):1049–60. doi:http://dx.doi.org/10.1111/medu.13390.
21. Newton JM, Jolly BC, Ockerby CM, Cross WM. Clinical learning environment inventory: factor analysis. *J Adv Nurs* 2010;**66**(6):1371–81. doi:http://dx.doi.org/10.1111/j.1365-2648.2010.05303.x.
22. Boor K, Scheele F, Van Der Vleuten CP, Teunissen PW, Den Breejen EM, Scherpbier AJ. How undergraduate clinical learning climates differ: a multi-method case study. *Med Educ* 2008;**42**(10):1029–36. doi:http://dx.doi.org/10.1111/j.1365-2923.2008.03149.x.
23. Pimmer C, Pachler N, Genewein U. Contextual dynamics in clinical workplaces: learning from doctor–doctor consultations. *Med Educ* 2013;**47**(5):463–75. doi:http://dx.doi.org/10.1111/medu.12130.
24. McConaughey E, Howard E. Midwives as educators of medical students and residents: results of a national survey. *J Midwifery Womens Health* 2009;**54**(4):268–74. doi:http://dx.doi.org/10.1016/j.jmwh.2009.03.016.
25. Avery MD, Montgomery O, Brandl-Salutz E. Essential components of successful collaborative maternity care models: the ACOG-ACNM project. *Obstet Gynecol Clin* 2012;**39**(3):423–34. doi:http://dx.doi.org/10.1016/j.ogc.2012.05.010.
26. Reiger KM, Lane KL. Working together: collaboration between midwives and doctors in public hospitals. *Aust Health Rev* 2009;**33**(2):315–24. doi:http://dx.doi.org/10.1071/AH090315.
27. Olmos-Vega FM, Dolmans DH, Vargas-Castro N, Stalmeijer RE. Dealing with the tension: how residents seek autonomy and participation in the workplace. *Med Educ* 2017;**51**(7):699–707. doi:http://dx.doi.org/10.1111/medu.13326.
28. Ahmadi G, Shahriari M, Kohan S, Keyvanara M. Fear, an unpleasant experience among undergraduate midwifery students: a qualitative study. *Nurse Educ Pract* 2018;**29**:110–5. doi:http://dx.doi.org/10.1016/j.nepr.2017.12.004.
29. Reiger K, Lane K. 'How can we go on caring when nobody here cares about us?'Australian public maternity units as contested care sites. *Women Birth* 2013;**26**(2):133–7. doi:http://dx.doi.org/10.1016/j.wombi.2012.11.003.
30. Hastie C, Fahy K. Inter-professional collaboration in delivery suite: a qualitative study. *Women Birth* 2011;**24**(2):72–9. doi:http://dx.doi.org/10.1016/j.wombi.2010.10.001.
31. King TL, Laros RK, Parer JT. Interprofessional collaborative practice in obstetrics and midwifery. *Obstet Gynecol Clin* 2012;**39**(3):411–22. doi:http://dx.doi.org/10.1016/j.ogc.2012.05.009.
32. Ebert L, Tierney O, Jones D. Learning to be a midwife in the clinical environment; tasks, clinical practicum hours or midwifery relationships. *Nurse Educ Pract* 2016;**16**(1):294–7. doi:http://dx.doi.org/10.1016/j.nepr.2015.08.003.
33. Gallagher P, Carr L, Wang S-H, Fudakowski Z. Simple truths from medical students: perspectives on the quality of clinical learning environments. *Med Teach* 2012;**34**(5):e332–7. doi:http://dx.doi.org/10.3109/0142159X.2012.670738.

Please cite this article in press as: M. Rahimi, et al., The clinical learning environment of a maternity ward: A qualitative study, Women Birth (2019), https://doi.org/10.1016/j.wombi.2019.01.002

34. Sheehan D, Wilkinson TJ, Billett S. Interns' participation and learning in clinical environments in a New Zealand hospital. *Acad Med* 2005;**80**(3):302–8. doi:http://dx.doi.org/10.1097/00001888-200503000-00022.
35. Stevens JR, Witmer TL, Grant RL, Cammarano DJ. Description of a successful collaborative birth center practice among midwives and an obstetrician. *Obstet Gynecol Clin* 2012;**39**(3):347–57. doi:http://dx.doi.org/10.1016/j.ogc.2012.05.003.
36. Ponzer S, Hylin U, Kusoffsky A, Lauffs M, Lonka K, Mattiasson AC, et al. Interprofessional training in the context of clinical practice: goals and students' perceptions on clinical education wards. *Med Educ* 2004;**38**(7):727–36. doi:http://dx.doi.org/10.1111/j.1365-2929.2004.01848.x.
37. MacNaughton K, Chreim S, Bourgeault IL. Role construction and boundaries in interprofessional primary health care teams: a qualitative study. *BMC Health Serv Res* 2013;**13**(1):486. doi:http://dx.doi.org/10.1186/1472-6963-13-486.
38. Collins-Fulea C. Models of organizational structure of midwifery practices located in institutions with residency programs. *J Midwifery Womens Health* 2009;**54**(4):287–93. doi:http://dx.doi.org/10.1016/j.jmwh.2009.03.007.
39. Angelini DJ, O'Brien B, Singer J, Coustan DR. Midwifery and obstetrics: twenty years of collaborative academic practice. *Obstet Gynecol Clin* 2012;**39**(3):335–46. doi:http://dx.doi.org/10.1016/j.ogc.2012.05.002.

Please cite this article in press as: M. Rahimi, et al., The clinical learning environment of a maternity ward: A qualitative study, Women Birth (2019), https://doi.org/10.1016/j.wombi.2019.01.002